left the influence of friction to be found from observations. Erman deduces this latter influence analytically.

THE DAILY WEATHER MAP FOR MEXICO.

A great addition has lately been made to our knowledge of the meteorology of North America by the publication of the daily weather map for the Republic of Mexico, the issue of which began March 1, 1899. The map is about 12 inches high by 16 broad, and enables one to make immediate connection with the daily map of the United States and Canada. The observations are made simultaneously at 8 a. m., on the seventy-fifth meridian or 6:23 a. m., local mean time of the City of Mexico. Barometric pressures are reduced to sea level, but apparently not to standard gravity. The temperatures are surface observations and not reduced to sea level. The metric system is used. The observations are made by the officials of the federal telegraph system, whose director general, Senor Chaves, with the assistance of Senator Bárcena has finally succeeded in accomplishing this great work under the general direction of the Secretary of the Department of Roads and Public Works. A sample map is reproduced on Chart XI of the present REVIEW. The reader will easily convert the isobars and isotherms into English equivalents by the following small table:

Pressure.		Temperature.	
Millimeters.	Inches.	C.	F.
		°	°
740.0	29.13	−40	− 40
742.5	29.23	−35	− 31
745.0	29.33	−30	− 22
747.5	29.43	−25	− 13
750.0	29.53	−20	− 4
752.5	29.63	−15	+ 5
755.0	29.72	−10	+ 14
757.5	29.82	− 5	+ 23
760.0	29.92	0	+ 32
762.5	30.02	+ 5	+ 41
765.0	30.12	+10	+ 50
767.5	30.22	+15	+ 59
770.0	30.32	+20	+ 68
772.5	30.41	+25	+ 77
775.0	30.51	+30	+ 86
777.5	30.61	+35	+ 95
780.0	30.71	+40	+104
782.5	30.81		
785.0	30.90		

This map appears as an annex to the Boletin Telegrafico, published by the Department of Federal Telegraphs. The first number of the Boletin and map is dated March 1. The text of the Boletin seems to be confined to statistical data, relative to imports and exports, but we copy the following remarks from the first number.

THE UTILITY OF THE WEATHER MAP.

(Translated from the Boletin Telegrafico of March 1, 1899.)

The meteorological phenomena of any locality are not isolated and independent; they are not even complete phenomena but are parts of one that started far away, and which, in its subsequent development, assumed various aspects and traversed hundreds and thousands of kilometers. A single city or a limited region sees only one phase of the whole phenomenon.

Hence the necessity for comparing the meteorological records collected in various localities. In order to obtain such data, the Central Meteorological Observatory requested from the telegraph companies of the federal system, simultaneous observations of weather conditions.

These observations were, however, deficient and imperfect, and of very little use to the Observatory on account of the inaccuracy which such observations necessarily possess when based upon the appreciation of each individual and not upon the readings of appropriate instruments.

The Director of the Federal Telegraphs desirous, through his service, of assisting the Observatory with more accurate and incomparably more useful records, distributed among 35 telegraph offices the instruments necessary for obtaining the data relative to pressure, temperature, humidity of the air, direction and force of the wind, taking care that these 35 offices should be at appropriate distances one from the other and properly distributed throughout the vast territory of the Republic. We should also state that in addition to the 35 federal stations four other private stations have also given us their cooperation; their assistance is much appreciated and gratefully acknowledged by the Director and their work will receive the publicity it merits.

The weather map, which is published in the Republic for the first time to-day, shows the weather conditions *at the same moment over the whole country.*

For the past six months, the observations, as recorded by the instruments, have been transmitted every day by telegraph, and the Central Office reduces and computes them by means of numerical tables properly prepared, in order to trace the curves of full and dotted lines, which show on the map the points all over the country where the pressures and temperatures respectively are the same. The pressures are drawn for every $2\frac{1}{2}$ millimeters, and the temperatures for every 5 degrees. Of course, the regions between two isobars and two consecutive isotherms are comprised between the numbers represented by the said lines.

These lines are continuations of those of the United States and can be followed on the maps of that country. It was in order to form as it were one service that the Government of Mexico organized its own service on the same system as that adopted in the United States, and both countries make a daily exchange of their respective observations.

As regards the public, the principal object of a meteorological service like the one inaugurated to-day, is the prediction of the weather; such predictions are not possible except with a very long series of observations, and by taking all the precautions which the complexity of the atmospheric phenomena demand. These phenomena are the more complex in proportion as the region where they are observed is exceptional, as is the case in our country.

The record above referred to will aid the telegraph service in making more accurate predictions than it has yet ventured on, if only for the purpose of warning the inspectors of the damage likely to be done along the line of danger, and by causing the officials charged with the care of the lines, to take the necessary precautions in time, in order to foresee or to repair the damage often done by thunderstorms, particularly along the coast. Such precautions were adopted with good results on the occasion of the last thunderstorm.

Besides this, the telegraph service also derives from the simultaneous meteorological service, extending over large sections of country, the great advantage of acquiring a better knowledge of the conductibility and insulation of the telegraph wires. All of these direct benefits to the telegraph service contribute indirectly to the public good by conducing to a better telegraphic service than exists at present. In addition to this, there is also a great and direct advantage to be derived by the agriculturist, navigator, or who would undertake to collect, study, and analyze the maps and make his own predictions. Be this, however, as it may, the essential feature is in the official meteorological service itself, which affords the basis for the prediction of the weather. Such predictions will also be attained in the course of time.

JOHN H. HARMON.

Announcement is made of the death at Washington, D. C., on March 29, 1899, of Mr. John H. Harmon, of the Central